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ABSTRACT

The purpose of the study was to assist in developing a system of communication for six multiply handicapped hearing impaired children (2 1/2 to 5 years old). The Natural Gesture language system was employed to initiate communication between educator and child. The educational intervention consisted of daily 1/2-hour language lessons incorporating action-bound gestures. All six of the children responded to the gestures and initiated some of the language expressively; some incorporated vocalization in conjunction with the gestures; and those children with physical involvements adapted and modified the gestures, which proved to be recognizable and valid. (SBH)

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NATURAL GESTURE LANGUAGE AND SPOKEN WORDS: MODE OF COMMUNICATION FOR THE MULTIPLY HANDICAPPED HEARING IMPAIRED INFANTS AND TODDLERS

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NATURAL GESTURE LANGUAGE: MODE OF COMMUNICATION

FOR THE MULTIPLY HANDICAPPED HEARING IMPAIRED

INFANTS AND TODDLERS

"... when we cannot find words at once, we know, perhaps, that we shall be able to convey some sort of a meaning by shrugging our shoulders, raising our eyebrows, by pouting, scowling, or using our hands, and that when it is impossible to converse with someone within hearing we may do a great deal of gesticulation."[1]

Can one say that language is born of motion, and may grow in the early stages with learning by doing. It may be a process of growth of movement. Is its origin in the action of body muscles that evoke or stimulate articulatory muscles that engage in exercise deliberately and in sequence. It appears that the body motion of hearing impaired infants (Maviiya, 1975) stimulate emission of vowel and consonant sound combinations. The greater the quantity of phonation the more expansive the movement of the body. The contrast occurs at the decline of babbling, for then the body becomes less active, the infant looks at fewer objects, and the oral production lessens and finally ceases. The motoric aspect of the feedback system may contribute to the maintenance and development of prelinguistic expression. The possibility that language may originate in

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[1]A. F. Watts, The Language and Mental Development of Children (London: George G. Harrap & Co., Ltd., 1967), p. 42.

action is a provocative one. The idea is not a new one, for the notion that verbal language evolves from gesture is reported (Perez, 1886, McCarthy, 1965).[2]

Body movements express something of inner feelings and do serve to communicate. Any part of the body under voluntary control can be used by man for secondary purposes as suggested by Sapir (1921).[3] The so-called speech mechanism, comprised of tongue, lips, glottal cords, etc., functions primarily in eating. Its secondary purpose is speech. Linguistic significance must be associated with all movements including speech movements. Body movements, such as waving, winking and shrugging shoulders communicate feelings; emotions, and ideas. These actions are for secondary purposes and must be studied in conjunction with verbal symbols, voice and context to determine their use in communication. There is a possible linguistic transfer in gesture language. This is true of deaf-mutes, Trappist Monks who are vowed to silence, Plains Indians in North America, and parties within seeing but not hearing distance. Efron (1972) comments about the development of Sicily of gestures for communication purposes because of the suppression of speech by Hieronemus of Syracuse in 1782.[4] Ideas between the parties involved

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[2]B. Perez, Les Trois Premieres Annees de L'Enfant (Paris: Ancienne Librarie Germer-Bailliere et Cie, 1886), p. 15; Dr. McCarthy Language Development in Children. In L. Carmichael (Ed.), Manual of Child Psychology (New York: Wiley & Sons, 1965).

[3]E. Sapir, Language (New York: Harcourt, Brace & World, Inc., 1921, 1949 ed.), p. 9.

[4]D. Efron, Gesture, Race, and Culture (Paris: The Hague, Mouton, 1972), p. 63.

seem to be directly conveyed "by a quasinstinctive imitativeness."[5] Sapir claims that their intelligibility is due to automatic and silent translations into the terms of a greater flow of speech. We appear to respond to natural gestures with a knowledge, difficult to describe, but understood by all.

One of the leaders in the study of body motion communication, Ray Birdwhistell, indicates that all children acquire a system of body motion communication as they learn their language. They acquire both verbal and body language as they mature and become members of a cultural group.[6] Children explore their world and investigate their environment with their bodies. Even as adults we engage in expression using our body for added emphasis. Certain ethnic groups use different repertoires of gesture during conversations (Efron, 1972).

Piaget suggests that young children express and talk with their bodies in a kind of acting out of conversations.[7] They act on things and manipulate them to understand them within their environment. Very young children use their bodies as an extension of verbal language: a few words plus a pointing finger clarify the

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[5]E. Sapir, op. cit., p. 21.

[6]R. Birdwhistell, Kinesics and Context: Essays in Body Motion Communication (Philadelphia: University of Pennsylvania Press, 1970) p. 7.

[7]J. Piaget, The Language and Thought of the Child (trans. M. Gabain. New York: Meridian Books, 1955), p. 94.

expression, "go there." They are in constant motion as they play, talk or work. These movements may be but are not always accompanied by vocalizations or words. In fact, acted out communication constitutes and presents information.

Body language can be defined as any reflexive or nonreflexive movement used to communicate in emotional, attitudinal or informational message (Wood).[8] Not all nonverbal languages have a one-to-one relationship between motion and meaning but a sizeable number of them do become what might be termed "gesture words." These are movements that are always associated with certain meanings, for example, waving one's hand for "good-bye." There are "gesture sentences" where a gesture pattern like pressing both hands on the stomach and wearing a pained expression would indicate, "I'm hungry." Efron speaks of iconographic gestures and kinetographic gestures: the first visually show what they mean like making a circle with the hand to indicate a circle; and kinetographic gestures which depict a body action such as running.[9] We see where gestures have meaning independent of or in conjunction with verbal speech.

Natural gesture language appears to have a universal quality in the sense that many gestures are understood throughout the world.

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[8]B. Wood, Children and Communication, Verbal and Nonverbal Language Development (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1976), p. 184.

[9]Efron, op. cit., p. 11.

When a traveler finds himself in a country where he is not proficient in the native language, he inevitably resorts to natural gestures and is usually able to communicate his message.

The purpose of this study was to assist in developing a system of communication for multiply handicapped hearing impaired infants and toddlers. These children have a combination of disabilities that render them severely handicapped. They are hearing impaired and one or more of the disabilities including cerebral palsy, mental retardation, perceptual problems, and emotional disturbances. The concomitant communication handicap became a challenge, and the Natural Gesture language system was employed to initiate communication between educator and child. Although the pilot study lasted only three weeks it proved to be productive with six multiply handicapped children ages 2 1/2 to 5 years who were taught by graduate students during this period.

The child affected by cerebral palsy may have difficulty in making the fine movements required for speaking. Their lack of mobility may have limited their experience affecting the development of concepts, but motor difficulties do not preclude language understanding. The deaf child with cerebral palsy may have to adapt gestures as an alternative to oral expression. The child with Down's syndrone or who is retarded intellectually may have difficulty using his tongue in movement for speech. The combined effect with hearing impairment can be devastating. Alternatives must be established for children with perceptual difficulties or emotional

disturbances. The multiply handicapped child may well turn to gestures to acquire a symbol system in order to develop his inner language and expressive system. All children as a part of our verbal society must learn to understand and receive messages as well as to send them. The role of communication in the child's overall development is primary. He must learn to ask for help, disagree, and explain an idea. With this special population of multiply handicapped deaf we should assist him in acquiring strategies to deal with daily familiar situations. He will then learn to function effectively and appropriately in his social world.

One of the effective models which demonstrates the forces that affect childrens' communication is that proposed by Wood.[10] She lists three:

1. Input. Interpersonal forces including environmental factors wherein interaction with adults and peers develop.
2. Intrapersonal forces or biological factors involving maturation and then practice.
3. Output: the result of intrapersonal and interpersonal forces.

Infants and toddlers are discovering their world through sensory experiences, touching, liking and poking as well as looking. To help them build a realistic picture of the world, interaction with persons is imperative. As their brain matures the children attain developmental milestones such as sitting, walking and combining

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[10]Wood, op. cit., p. 3.

words into phrases. The multiply handicapped hearing impaired child needs to acquire his mode of communication.

A handicapped child may require a catalyst, a communication environment where the models would provide verbal and nonverbal language patterns to be discovered. The child's interaction with the models provides discovery and practice in communication. Imitation may be a crucial learning strategy in a child's acquisition of nonverbal communication.

Very young children learn communication with their mother and family and profit from close communication as they engage in touch and hug frequently. The Ling study (1975) investigated the different modes of communication used during the first three years of life between mothers and their infants. The results showed that the verbal mode on the part of the mothers predominated at all ages, and that there was a high incidence of eye contact, facial expression, body posture and some gesture. Body posture and action were the main modes of communication with mothers of one month old infants, in conjunction with verbal behavior. There was less communication by the infants especially in the first year, and it was only one mode at a time regardless of age.[11] It would appear that providing a mother's attentiveness in the educator of the multiply handicapped hearing impaired child might serve as an appropriate method of initiating communication.

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[11]D. Ling and A. H. Ling. "Communication Development in the First Three Years of Life" Journal of Speech and Hearing Research, Vol. 18, No. 3, pp. 146-159.

This study focused on gestures which have an essential physical movement that characterize the gesture and is easily recognized by an untrained observer. Most of the gestures collected in this book are complexes of motion, and may be analogous to sentences. We have excluded any specialized gesture systems such as ritual gestures found in secret organizations, American Sign Language, or game gestures. The collection gathered here is by no means complete for an infinite number of gestures are used almost unconsciously by most people.

The sketches of familiar body and facial gestures included are labeled semantically and set forth in alphabetical order. Descriptions of the gestures are given under the gestural picturization. They incorporate feelings, wants and emotions. The descriptions cannot be complete in all instances since the context in which gestures are made lend more information. The semantic labels range from the very general "Where?" to the specific "Me." The illustrations capture the essence of the movements for easy recognition and reproduction.

When gestures are used with the multiply handicapped hearing impaired population they must be accompanied by verbal utterances at all times since they are known as words in the context of the situation. A smile along with a clapping of the hands and accompanied by the word, "Good" is obvious in meaning. We use gesture in conjunction with the verbal message including intonation and appropriate stress in order to maintain a normalcy of communication

and engender if possible any auditory response that may be present. The visual reinforcement in speech-reading may prove to be a clue for understanding the message.

Parents and educators use many natural gestures in their daily schedule with normal infants and toddlers--during feeding, dressing, bathing and playing. The child learns the meanings of these gestures by constant encounter. Since most children learn these meaningful gestures early in life, it seems feasible to employ them to establish communication with the very young multiply handicapped hearing impaired children who undergo great difficulties in building up a communication system. This use of gesture is contrary to the general rule in the development of language with hearing impaired children which discourages gesticulation when it is plausible to talk. However, the hearing impaired child with a concomitant problem does require more dynamic movement and special consideration.

Among the multiply handicapped population are those who neither have the ability to imitate verbal words and sentences nor even the capacity to retain them. When the multiply handicapped deaf child is unable to lip-read or even sign-read, the natural gesture system can be used as an entity in itself or as a supplement to oral language. Most natural gestures appear instinctive as the gesture for "read." This might be pictured as the act of reading by turning the head left to right, or depicted as a book being opened. These might be considered to be "cognates" with the physical visualization of the action or object named (Vetter, 1969).

It has been documented that nonverbal communication predominates during the first year of life of a child.[12] At this age he speaks with his whole body at first. It seems plausible and it became evident in this pilot study that multiply handicapped infants and toddlers can learn to communicate using this mode of communication, a natural gesture language. It is conceivable that this technique could establish a communication mode until a child is able to read lips or develop standard sign language. A young hearing impaired toddler is concerned with achievement as related generally to himself. He often taps himself on his chest as he points to finished project to indicate his achievement. Adults usually follow up the gesture with a verbal reinforcement, "You made that so pretty, Johnny!" One frequently uses gesture with a deaf child to achieve understanding through activities related to familiar words. Oftentimes, an iconic gesture will remind the child of a word and help to elicit comprehension of a situation accompanied by appropriate verbal comment. one can provoke and initiate communication.

In this study the educational intervention with the children consisted of daily one-half hour language lessons incorporating action-bound gestures. The intent of the program was to employ natural gestures in a language-oriented activity, anticipating

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[12] H. J. Vetter. Language Behavior and Communication: An Introduction (Itaca, Illinois: F. E. Peacock Publishing, Inc., 1969), p. 206.

that the child would receive and express these gestures. Various concepts were used such as "up" (climbing up, lifting oneself up, moving objects up, and stretching arms up). By working individually the teacher was able to assess the needs and progress of the child.

The youngest child (cerebral palsy, hearing impaired, 2 1/2 years old) learned to respond to the commands "Pick up _____ (the ball)." "Give me _____." "Open the box." "Close the box." "Stop!" "Come." He himself gestured "Stop," and "Bye Bye." He also began to vocalize /ʌ / with a toy telephone. The oldest child (cerebral palsy, hearing impaired, 5 years old) benefitted markedly with the use of the natural gesture system. He responded to such commands as "Look" "Stop!" "Come." "Do you want a drink?" In reply to the last question, he gestured "Yes" and "drink." He learned to point to the things he wanted. The system allowed him to communicate better with others and gave him an incentive to explore his surroundings.

A physically involved, mentally retarded, hearing impaired 3-year-old learned to say "Up," as she was lifted up by the teacher. In response to commands she pointed to her nose, eyes, mouth; she clapped her hands, and opened and closed her eyes. It appears that she might be ready for learning simple one- and two-syllable words like up/down, in/out, and big/little. Another 3-year-old gestures "Where?" when the teacher asks where an object is, and indicates "Yes" with the characteristic head nod and vocal grunt. He also responded to the commands "Stop" and "Come" while on a wheel scooter.

One child, 4 years old, who has a history of not imitating, after much work with establishing eye contact, was able to respond to "Come," and "Get up," "Open the box," "Close the box," and "Take _____ out of the box."

In spite of the fact that the time was short for establishing a language system, the foregoing productivity is encouraging. It appears that this type of meaningful language lesson resulted in both receptive and expressive communication.

Learning language is ongoing from birth. The most productive period of development of language occurs during the first three years of life. By employing natural gesture language--so instinctive for mothers and educators of very young children--one could develop a tool for communication. There is limited knowledge about the benefits of gesticulation with severely handicapped children. This investigation assisted in establishing communication and proved to be provocative. All six of the children responded to the gestures and they initiated some of the language expressively. Some incorporated vocalization in conjunction with the gestures. Those children with physical involvements adapted and modified the gestures, which proved to be recognizable and valid. This study can be regarded as a stimulus to further investigation, for it would be of inestimable value to know the extent to which this mode of communication, a natural gesture language, can be used to establish communication among the multiply handicapped infants and toddlers.

The origin of language is unknown, its beginnings extend too far back in prehistoric ages to fathom. Several theories exist and the one most frequently accepted is that language probably came into being by a slow process in response to various stimuli in early environment of man. Whatever the origin there can be no question as to the unique importance of language as a vehicle of communication. For a special group such as the multiply handicapped hearing impaired a special intervention is needed to establish communication skills, for to understand what one says and to express oneself is peculiarly human.

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Natural Gesture Language in Teaching

The name alone, Natural Gesture Language, reveals the technique of usage in teaching. It is natural in that the gestures are known, understood, used and accepted in our society. One may incorporate them with ease in the educational curriculum one prefers. In order to clarify a situation, or to comply with commands and wants an individual generally uses spoken language. With the addition of natural gestures one can employ a visual and simple communication system for those children who are unable, for various reasons, to initiate or retain a more intricate communication system.

With respect to how to employ the system there is no rigid cookbook technique necessary. It is a flexible tool to be used as one might any instrument to facilitate communication. Natural gestures are added to spoken words for intelligibility. The reception of a message is made simpler or established by using the natural visual aspect.

Almost unconsciously the human being uses the natural gesture language in communication with very young children. The same element of communication may be an integral part of the communication system one might incorporate to satisfy the language needs of the multiply handicapped hearing impaired population. The earliest curriculum for infants and toddlers involves sefl help skills, concepts of self including personal identification and one's body; physical needs including food, clothing, and shelter; feelings; everyday routine; concepts of social relationships including names of persons, their jobs, the neighborhood, school; and physical environment where people and animals live. These are concepts which are basic to all children of all ages. Each school must develop

its own curriculum to suit its needs in order to provide for the development of concepts.

The universality of natural gesture language can be developed in multiply handicapped hearing impaired children. It is a multisensory approach to linguistic development. It retains the emphasis of amplified auditory input which is so important for hearing impaired children. Regardless of a child's age one should initiate auditory experience for it is possible that developmental stages of listening extending from environmental sounds to voice and music in intonational patterns according to the four sentence patterns of English (imperative, interrogative, declarative, and exclamatory) might be adequate. Since expressive language will be dependent upon input and sentence patterns these are spoken along with the natural gestures.

The procedure of teaching using the natural gesture language system then is a simple one: that of developing those concepts taught all children and using the spoken words along with natural gestures to establish the communication necessary.